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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,449	06/19/2006	Kazuhiro Oshima	292365US0PCT	9019

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EXAMINER	
SASTRI, SATYA B	
ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
01/07/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/583,449	OSHIMA ET AL.	
	Examiner	Art Unit	
	SATYA B. SASTRI	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/19/06, 4/19/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Machine translations: JP2001-139733A and JP2002308919A*.

DETAILED ACTION

1. This office action is in response to application filed on June 19, 2006. Claims 1-10 are now pending in the application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 4, 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (JP 20022308919 A, English translation) in view of Yamaguchi et al. (JP 2001-139733, English translation).

Pending official translations, machine translations are used in the rejection set forth below.

Nakano et al. disclose an adhesive composition comprising an acrylate monomer, a drying oil, an organic peroxide, an accelerator and a filler (abstract). The compositions include 0.1 to 30 mass parts of drying oil per 100 parts of monomeric component (0007). Fillers with good thermal conductivity such as alumina powder, silica powder, aluminum nitride, boron nitride etc. may be used in the resin compositions (0026).

Working example discloses an adhesive composition comprising 100g of acrylate monomer, 3 g of initiator, 250 g of calcium carbonate and 1.5g cobalt octenate.

The prior art is silent with regard to the use of inorganic fillers with specific particle size distribution in the adhesive compositions.

The secondary reference discloses heat conducting sheets comprising a thermally conductive filler such as silicon carbide. Further, the prior art discloses that a remarkably high filler rate is attained by mixing fillers having larger and smaller average particle sizes (abstract). Particles with a mean particle size of 50-100 micrometers and particles with a mean particle size of 10 micrometers or less may be mixed in the wt. ratio of 1:1 to 3:1 as the thermal conduction filler (claim 1). In light of the advantageously high filling rate, it would have been obvious to one of ordinary skill in the art to include a combination of filler particle sizes such as that taught by Yamaguchi et al. in the adhesive compositions of Nakano et al. and thereby arrive at the presently cited claims.

Given that the larger filler particles may be present in up to 3 times the amount of the smaller particles, it is the examiner's position that the median and the mode must fall within the presently claimed range.

4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (JP 20022308919 A, English translation) in view of Yamaguchi et al. (JP 2001-139733, English translation) and further in view of Hemmings et al. (US 2003/0032707 A1).

The discussions with regard to Nakano et al. and Yamaguchi et al. above in paragraph 3 are incorporated herein by reference.

The prior art is silent with regard to the use of fillers with trimodal particle size distribution as claimed presently.

The prior art to Hemmings et al. discloses filler comprising fly ash for use in composites. This reference teaches that a filler or filler blend of particle size distribution with at least three modes that can be combined with polymer at higher loadings to produce a filled polymer or polymer composites (abstract). The particle sizes have a first mode having a median particle diameter ranging from 0.3 to 1.0 microns, a second mode having a median particle diameter of 10 to 25 microns, and a third mode having a median particle diameter from 40-80 microns. The particle size distribution includes 11-17% of the first mode, 56-74% of the second mode and 12-31% o the third mode (0024). Given the teaching on the art recognized suitability of trimodal particle sized fillers for obtaining highly filled polymers, it would have been obvious to one of ordinary skill in the art to include fillers with trimodal particle size distribution in the adhesive compositions of Nakano et al. and thereby arrive at the presently cited claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112. The examiner can be reached on Wednesdays and Fridays, 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Satya B Sastri/

Examiner, Art Unit 1796